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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/826,634

04/05/2001

Zoran Krivokapic

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06/21/2005

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EXAMINER

SMITH, BRADLEY

ART UNIT

PAPER NUMBER

2891

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EX

Office Action Summary	Application No. 09/826,634	Applicant(s) KRIVOKAPIC ET AL.	
	Examiner Bradley K. Smith	Art Unit 2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 10 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 10 is/are allowed.
- 6) ☒ Claim(s) 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>search notes</u> |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group II in the reply filed on 3/8/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Drawings

2. The drawings are objected to because the drawing are informal (i.e. they have not been drawn by a draftperson also the figure numbers and elements are informal. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

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informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krivokapic et al. (US Patent 6,087,208) in view of Yeh et al. (US Patent 6,319,807). Krivokapic et al. disclose a MOS structure with a polysilicon gate and tapered polysilicon spacers separated by a gap, a gate dielectric in the gap and a metal on the gate dielectric. However Krivokapic et al. fails to disclose the dielectric spacers on the side of the polysilicon. Whereas Yeh et al. disclose the formation of dielectric spacers (270) abutting the polysilicon (310). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Krivokapic et al. and Yeh et al. because the dielectric spacer would act as an offset from the source (See Yeh columns 1 and 2).

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krivokapic et al. and Yeh et al. as applied to claim 17 above, and further in view of one of ordinary skill in the art. Krivokapic et al. and Yeh et al. disclose the claimed

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invention except for the metal gate is less than 50 nm in length. It would have been an obvious matter of design choice to make the metal gate less than 50 nm in length, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). Furthermore a thinner metal gate would have less resistance.

6. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krivokapic et al. (US Patent 6,087,208) in view of Yeh et al. (US Patent 6,319,807). The method of forming a device is not germane to the issue of patentability of the device itself. Therefore, these limitations in claims 19 and 20 have not been given patentable weight and will be rejected according to the device limitations. Krivokapic et al. disclose a MOS structure with a polysilicon gate and tapered polysilicon spacers separated by a gap, a gate dielectric in the gap and a metal on the gate dielectric. However Krivokapic et al. fails to disclose the dielectric spacers on the side of the polysilicon. Whereas Yeh et al. disclose the formation of dielectric spacers (270) abutting the polysilicon (310). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Krivokapic et al. and Yeh et al. because the dielectric spacer would act as an offset from the source (See Yeh columns 1 and 2).

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krivokapic et al. and Yeh et al. as applied to claim 20 above, and further in view of one of ordinary skill in the art. Krivokapic et al. and Yeh et al. disclose the claimed invention except for the metal gate is less than 50 nm in length. It would have been an

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obvious matter of design choice to make the metal gate less than 50 nm in length, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). Furthermore a thinner metal gate would have less resistance.

Allowable Subject Matter

8. Claims 9 and 10 are allowed.
9. The following is a statement of reasons for the indication of allowable subject matter: the prior art neither teaches nor suggests the a bulk semiconductor substrate having a top surface a buried oxide layer atop said top surface of said substrate and a thin undoped SOI silicon layer atop said buried oxide layer thereon, said buried oxide layer having a thickness in the range between 50 and 60 nm, and said SOI silicon layer having a top surface and having a thickness in the range between 5 and 20 nm.

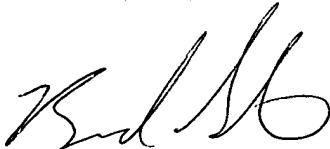
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K. Smith whose telephone number is (571) 272-1884. The examiner can normally be reached on 10-6 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Brad Smith', is positioned above the printed name.

Brad Smith
Primary Examiner
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